

Teen Substance Use; America's #1 Public Health Problem

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October 14, 2016

Disclosure

- Volunteer Member of Attorney Generals Task Force for Prescription Drug Abuse 2012-current

Welcome to being a parent of a teenager. Prepare for a large amount of eye rolling, emotional outbursts, and thoughts of running away. And that's just the parents.



Addiction in the US

- The US health care system contributed to the current opioid and heroin epidemic
- We absolutely need to increase access to treatment
- We need to improve how we treat pain
- We need to look for innovative solutions to prevent addictions
- Addiction in US \$700B annually
- Addiction has adolescent origins

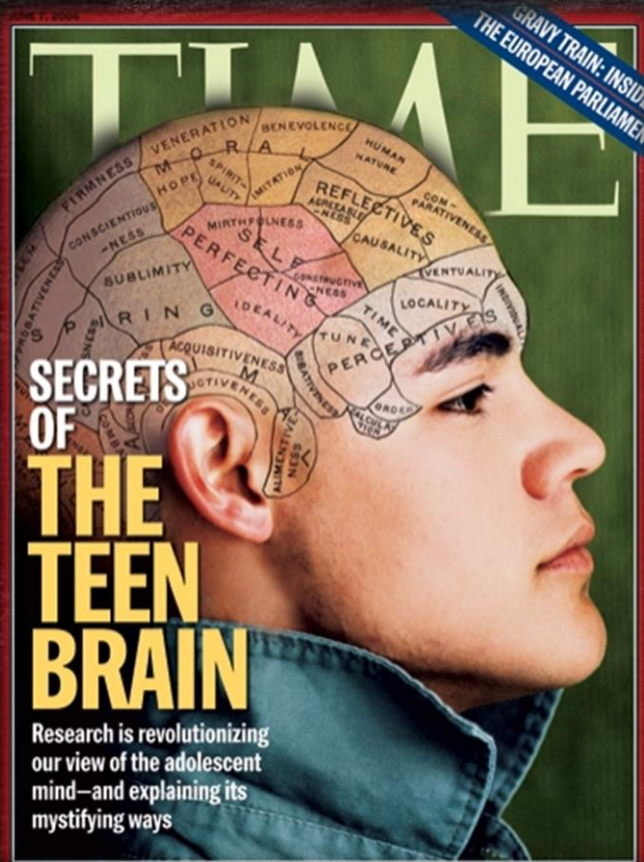
Risk of Addiction

- **90%** adults with substance abuse (nicotine/ alcohol /drugs) **began** smoking, drinking or using drugs < 18yo
- If use of substance <18yo
 - **25%** become addicted
- If use of substance >21
 - **4%** become addicted
- Children <15yo who use any addictive substance are 6.5X more likely to develop a substance use disorder as those who delay use until age 21 or older (**28.1 percent vs. 4.3 percent**).

Source:

"Adolescent Substance Abuse: America's #1 Public Health Problem," National Center on Addiction and Substance Abuse at Columbia University, June 2011, p. 2.

Adolescent Brain

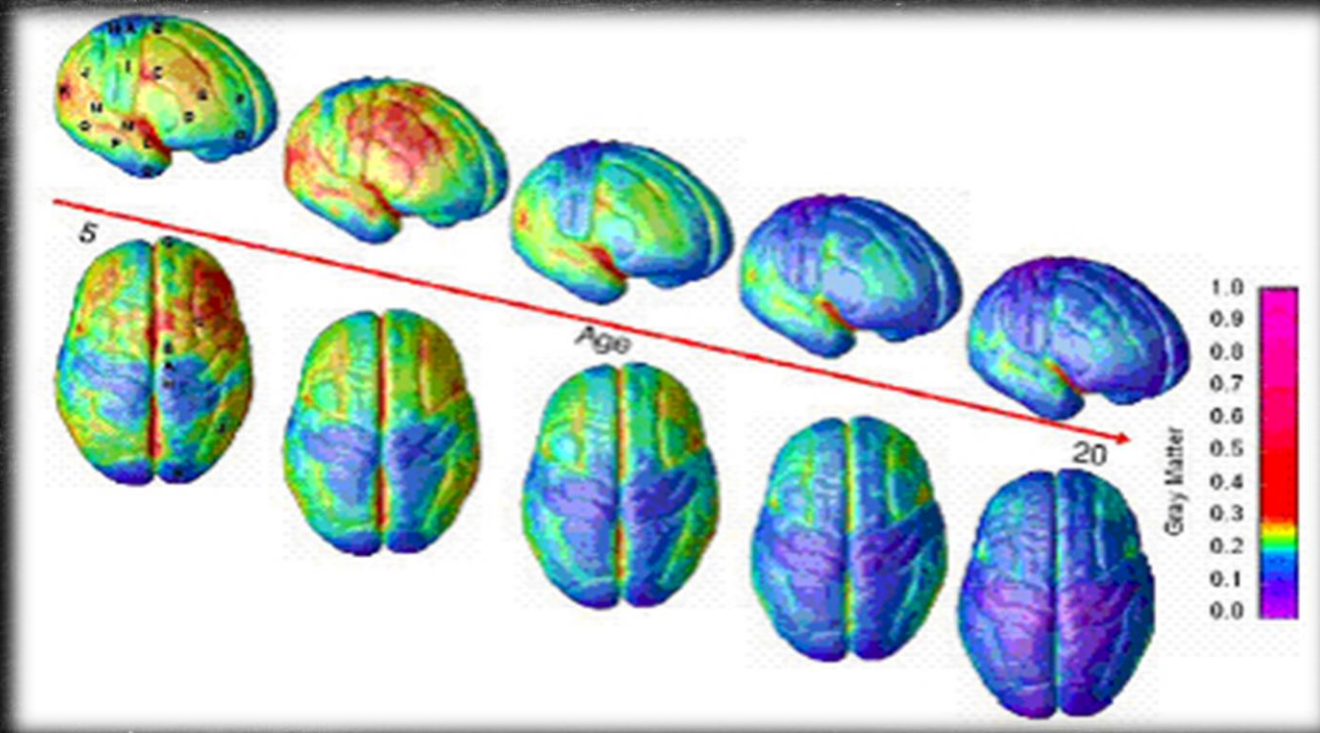


- Has traditionally been viewed with adult brain prism
- Societal norms based on incorrect assumption of brain development
- Die is not cast at puberty
- Immeasurable neuroplasticity ; extraordinary ability to learn new things
- Life Experiences during adolescence often significant primer future
- Harness a skill or talent

Teen Brain (<24 yo)

Immature Frontal Lobe & Executive Function

Executive function includes impulse control, problem solving, and inhibition, working memory and recognition of long term consequences.



Teen Brain (<24 years old)



- Primed to take risks
- Seek experimentation
- Immature decision making, judgment, impulse control
- Emotion & memory are not yet fully developed in adolescence
- **Addictive substance use physically alter brain structure and function faster and more intensely than in adults**
 - Interfering with brain development
 - Further impairing judgment
 - Significantly increase the risk of addiction

Why do teens use drugs or alcohol?

If using/abusing...

- To fit in
- To escape or relax
- To feel grown up
- To relieve boredom
- **To feel good** /excitement
- To rebel
- To experiment (curiosity)
- Peer Pressure
- To stay awake

If dependent on them...

- Craving ... a strong need or urge ingest substance
- Loss of control ... not being able to stop or cut down
- Feeling bad physically and emotionally when not using

Brain Physiology 101

When your brain releases
one of these chemicals,
you feel good.

Dopamine



Serotonin



Oxytocin

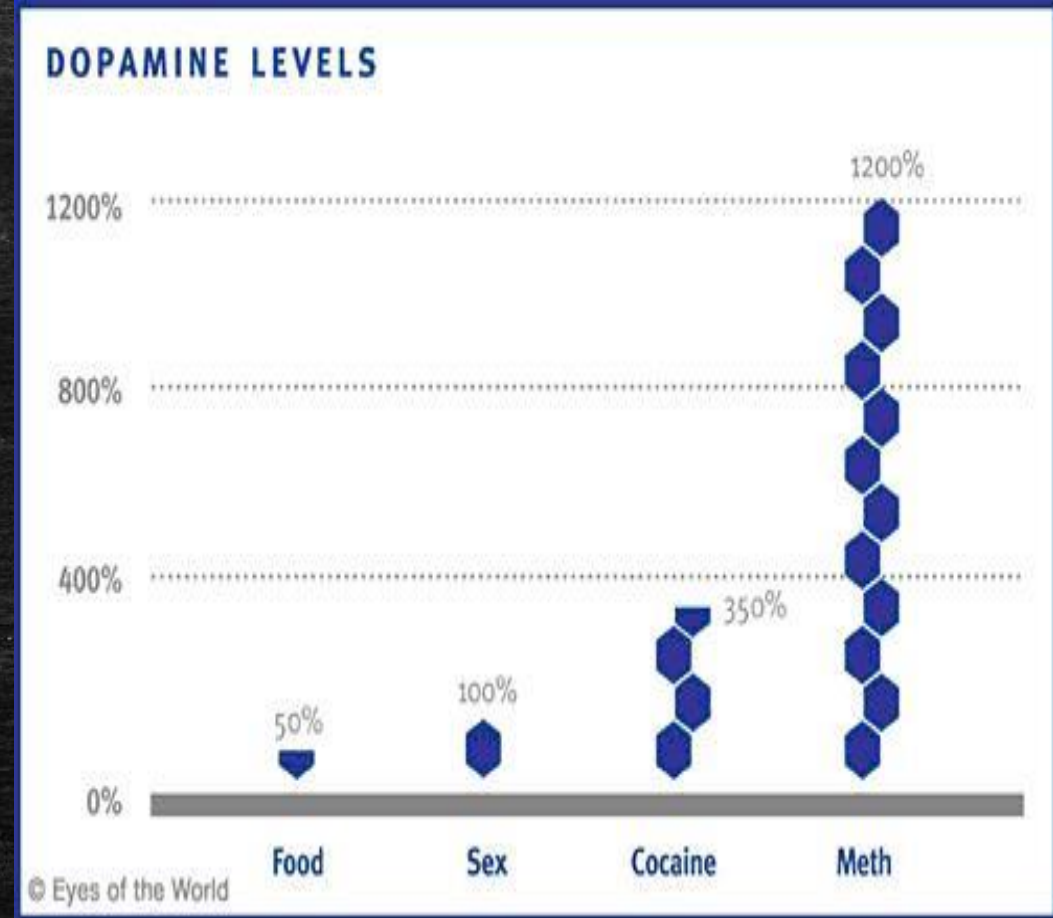


Endorphin

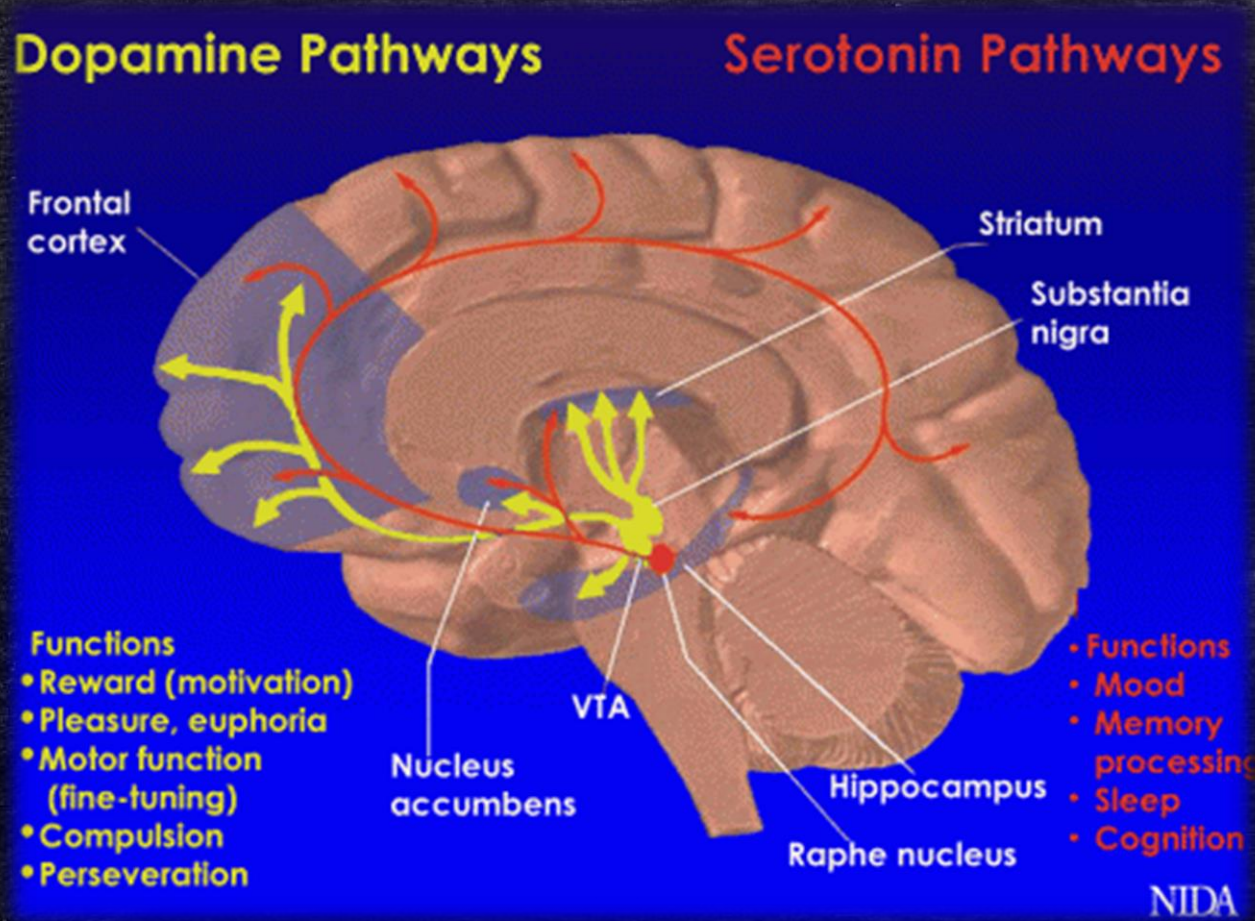


Dopamine hardwires brain “Reward/Motivation” in Teen Brain

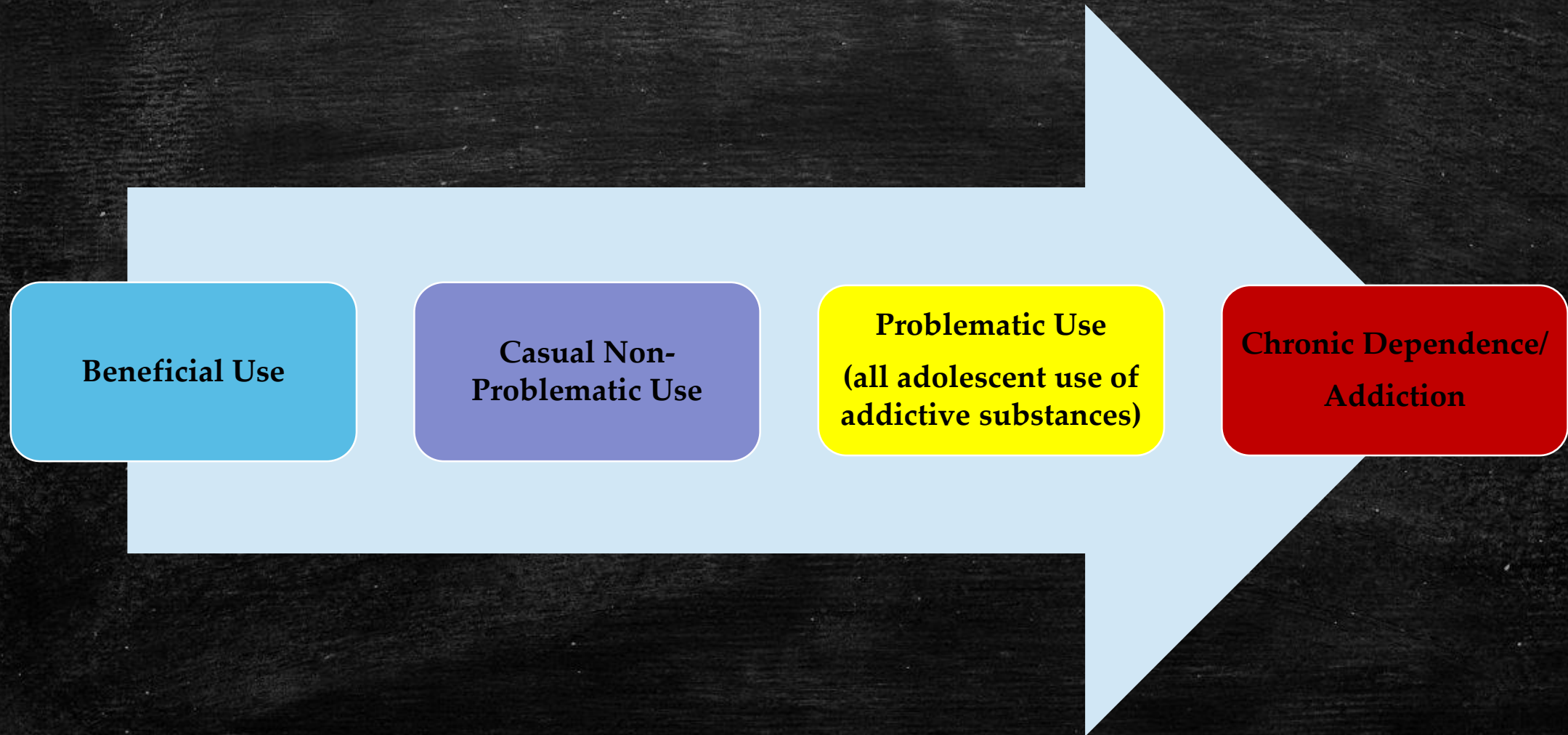
- Typically, dopamine(feel-good hormone) in the brain increases in response to natural rewards, such as food, sex and social interaction. When cocaine is taken, dopamine increases are exaggerated, and communication is altered



Reward Pathway – Feel Good (Motivation) hormones



Spectrum of Substance Use



Consequences of Teen Substance Use

- Injuries
- Unintended pregnancies/STI's/Sexual assault
- Asthma
- Depression, anxiety, psychosis
- Impaired brain function
- Reduced academic performance
- Reduced educational achievement
- Criminal involvement
- Death



DRUG ADDICTION

Addiction is a condition characterized by repeated, compulsive seeking and use of drugs, alcohol or similar substances despite adverse social, mental and physical consequences.



Treatment of Addiction

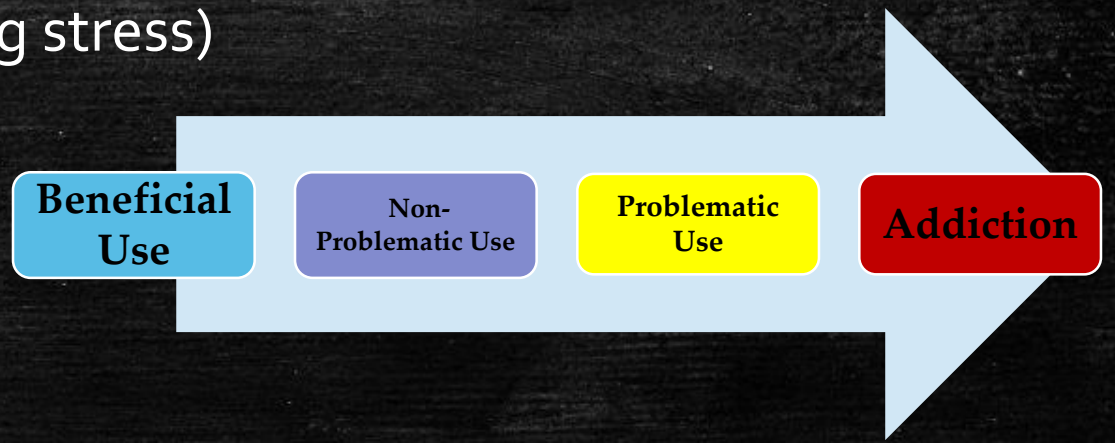
- Lifelong Recovery
- Cost prohibitive
- Difficult to access
- Relapse is the norm
- Life is never the same

40-60%
Relapse



Risk of Addiction Depends on

- Genetic inheritance (40-60%)
- Biological responses to the reward (Cannot control this)
- Past adverse experiences (neglect or abuse)
- Temperament
- Social influences
- Underlying mental health (including stress)
- Maturity of the brain



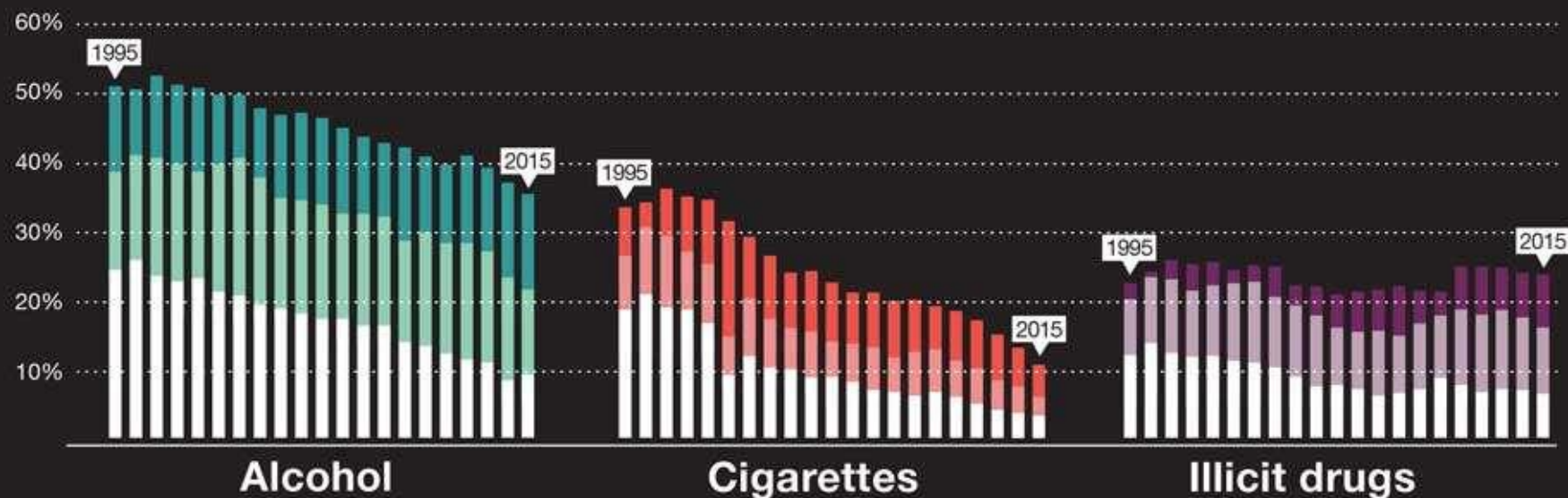
Monitoring the Future 2015



- 44,900 students (8th, 10th, 12th)
- Looks at trends, attitudes & beliefs about substance use
- Cigarettes / Alcohol are lowest in history of study
- Marijuana Perception of risk ↓
- **68%** of 12th graders do not believe regular use of Marijuana is harmful

LAST TWO DECADES OF ALCOHOL, CIGARETTE, AND ILLICIT DRUG USE*



*Past-month use



2015

 35.3% OF 12TH GRADERS
 21.5% OF 10TH GRADERS
 9.7% OF 8TH GRADERS

 11.4% OF 12TH GRADERS
 6.3% OF 10TH GRADERS
 3.6% OF 8TH GRADERS

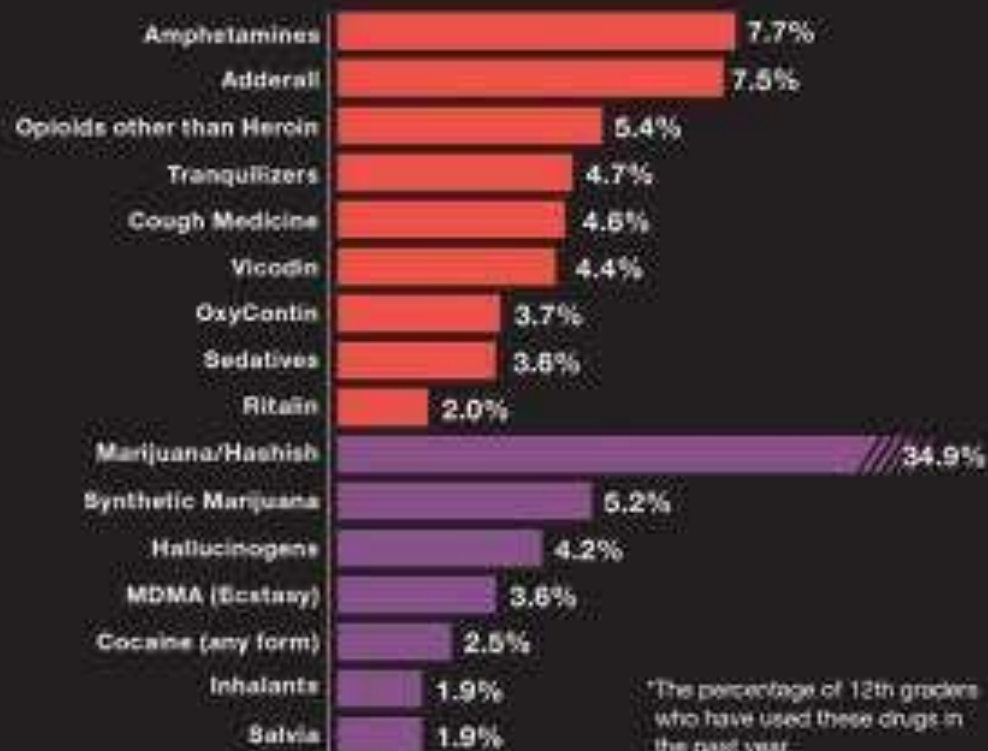
 23.6% OF 12TH GRADERS
 16.5% OF 10TH GRADERS
 8.1% OF 8TH GRADERS



National Institute
on Drug Abuse

WWW.DRUGABUSE.GOV

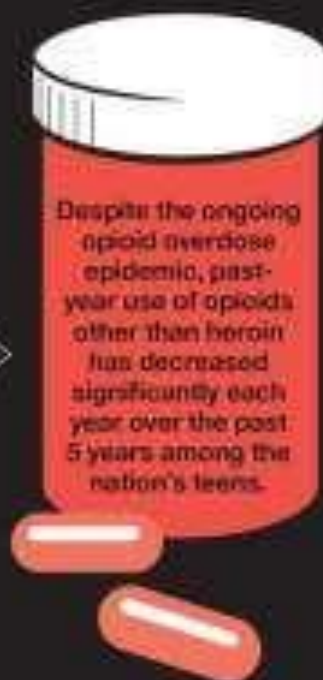
PRESCRIPTION/OVER-THE-COUNTER VS. ILLICIT DRUGS*



PRESCRIPTION/OTC



ILLICIT DRUGS



Despite the ongoing opioid overdose epidemic, past-year use of opioids other than heroin has decreased significantly each year over the past 5 years among the nation's teens.

Heroin use has also decreased over the past 5 years and is at the lowest rate since the MTF survey began.

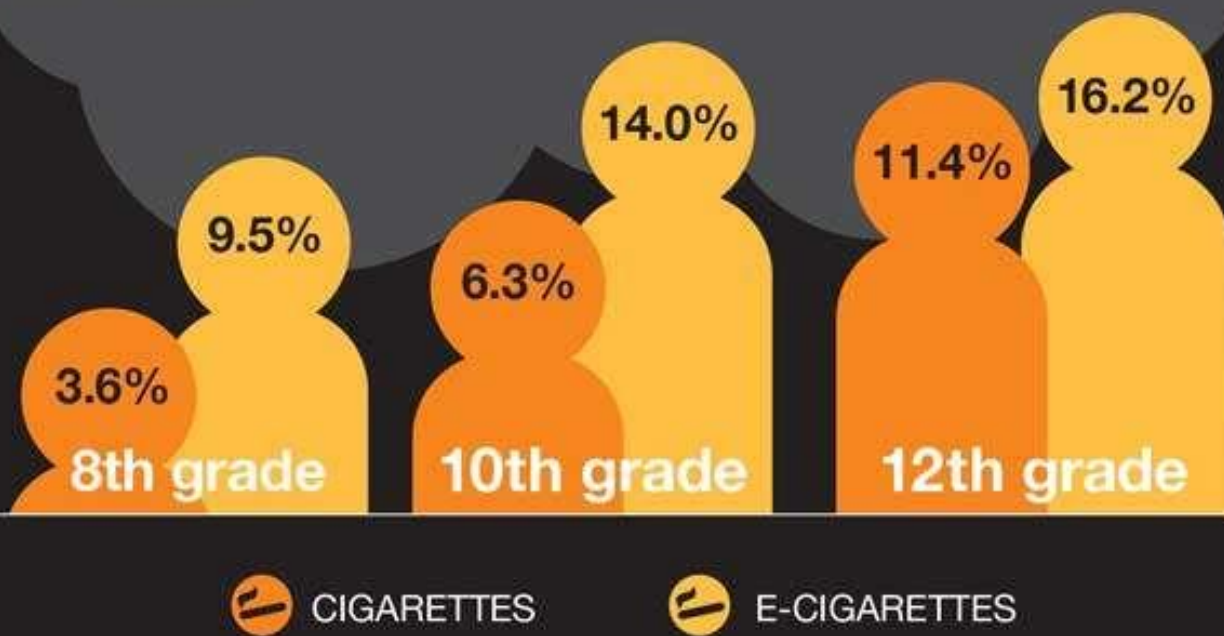


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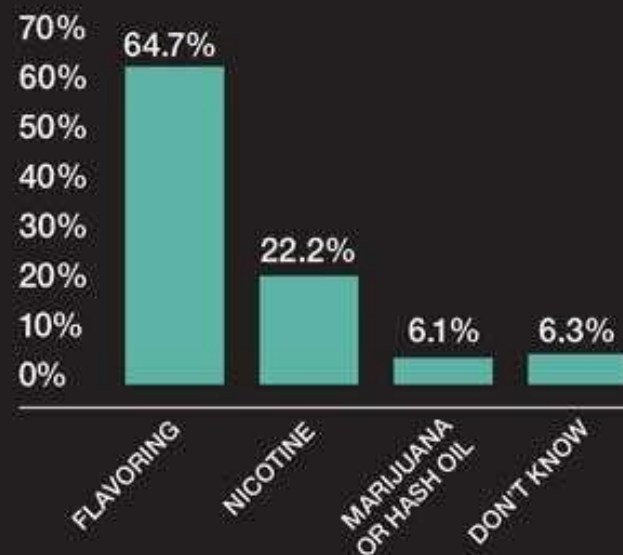
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TEENS ARE MORE LIKELY TO USE E-CIGARETTES THAN CIGARETTES

*Past-month use



64.7% of 12th graders reported vaporizing “just flavoring” in their last e-cigarette; some didn’t know what they inhaled. E-cigs are unregulated so flavored liquid might actually contain nicotine.



National Institute
on Drug Abuse

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E-Cigarettes & Vaping



Marijuana Use is Common

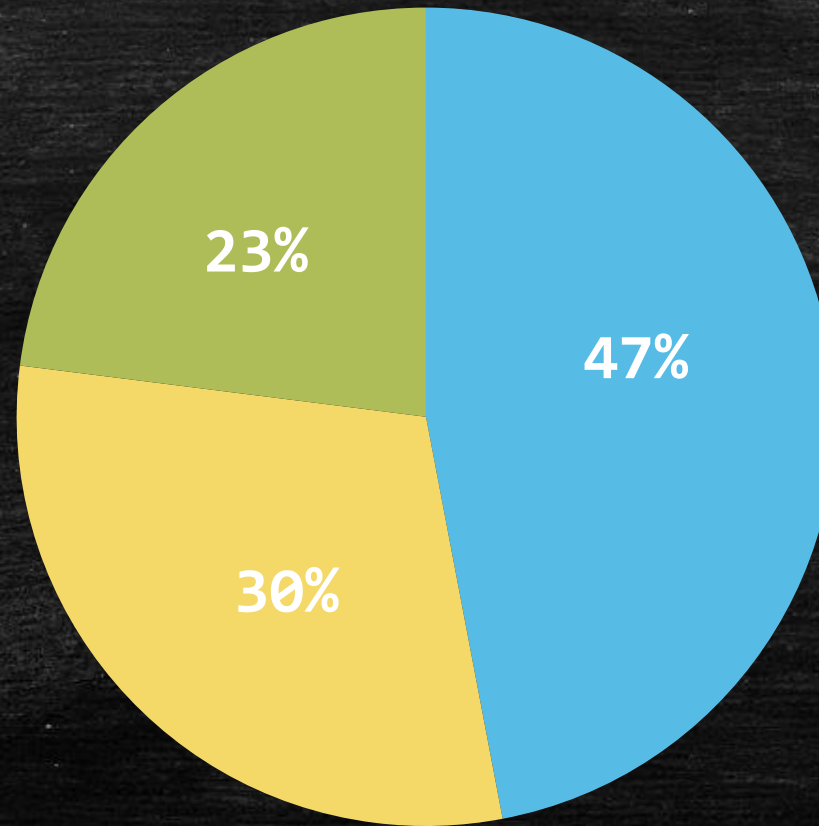
- Marijuana is the most commonly used illicit drug in the U.S.
- **7%** of all >12yo use Marijuana
- **19%** of all 18-25yo use Marijuana
- **48%** of adults in the US report having used marijuana at some time in their life



Why Do People Use Marijuana?

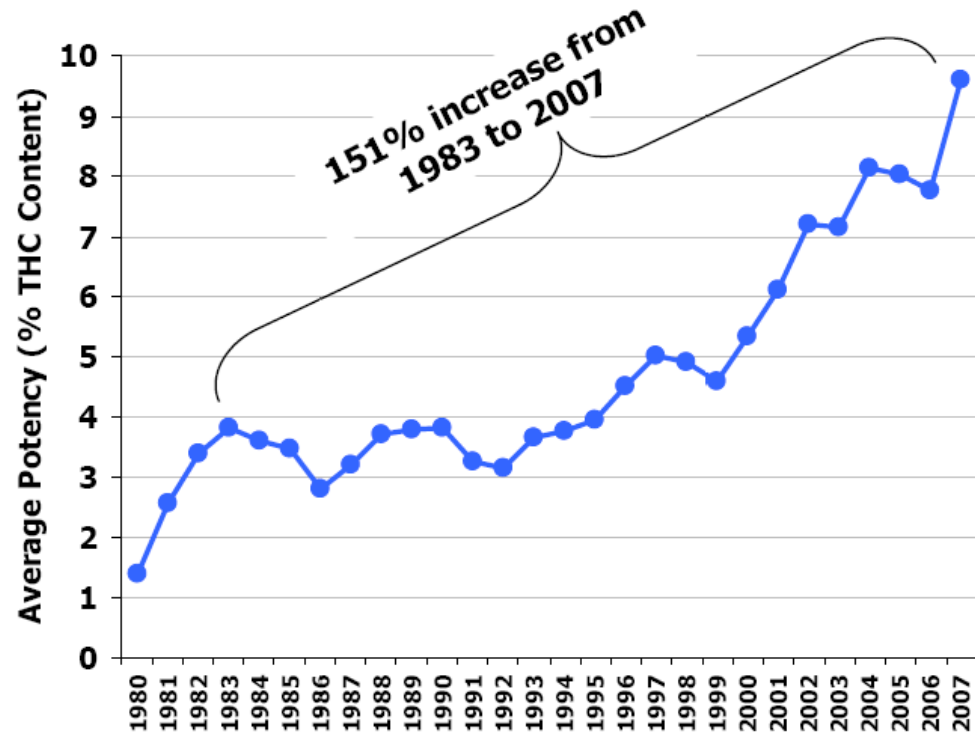
Among people who used marijuana in the past year:

■ For Fun ■ For Medical Reasons ■ For Fun and for Medical Reasons



“It’s not your dad’s ‘pot’ anymore”

Potency of Marijuana Seizures



Source: University of Mississippi, National Center for Natural Products Research. *Potency Monitoring Project Quarterly Report 100* (April 2008).

- Marijuana growers have worked to make the drug as potent as possible.
- In 1960s-70s average THC concentrations were 1-2%. Today, they are as high as 20%

Marijuana Short Term Effects

Potential Upside

- Reduce anxiety
- Promote Euphoria
- Promote Relaxation



Potential Downside



- Impaired memory
- Impaired learning attention
- Impaired reaction time/coordination(drugged driving)
- Increase risk Paranoia/Psychosis
- Impair decision making
- Acute intoxication (rare)

Teen Marijuana Use & Long-Term Associations

- Teen Marijuana users 2X likely to drop out HS
- Weekly marijuana users 6X more likely drop out HS
- Persistent and heavy use among adolescents reduces IQ by 8 points
- Increased risk of mental illness (??cause or effect)
 - Schizophrenia (6 fold)
 - Psychosis
 - Depression/Anxiety
 - Amotivational syndrome



1 in 6 teens become addicted

1 in 10 adults and **1 in 6 adolescents** who try marijuana will become addicted to it.



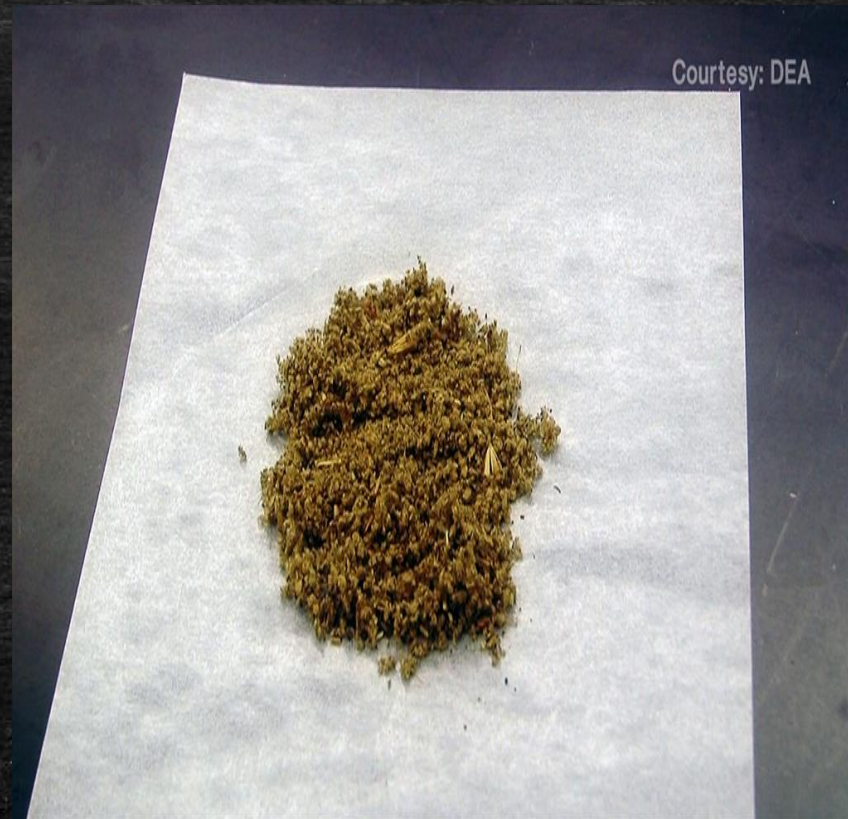
- The adolescent brain is especially susceptible to marijuana use.
- When kids use, they have a greater chance of addiction since their brains are being primed.

Is Marijuana a gateway drug?

If started before full brain maturation – likely

If started in adulthood- unlikely

What is “Spice” “K2”? (Synthetic Marijuana)



What is Spice?



- Spice or K2 is a mixture of herbs or spices sprayed with synthetic chemicals similar to THC in marijuana but more powerful
Smoked to get high
- **Spice is NOT Marijuana, it is a dangerous Hallucinogenic Drug!**
- Intentionally Mislabeled as "herbal incense", and "potpourri".
- Marked "Not For Human Consumption"

Sam Motsay (16yo)

Honor Student & Athlete from Centergrove HS



During high school, Sam was an honors class student who twice earned the Outstanding Academic Achievement recognition from his school. He also was twice named a Metropolitan Interscholastic Conference Scholar Athlete. He loved being an athlete, especially playing basketball, and he was proud to call himself a Trojan. Sam loved listening to music as well as playing his tenor sax at Center Grove, where he was first chair for several years. He was an outdoor enthusiast, enjoying hiking, fishing, hunting and going to the beach. Sam prized his laptop and was an avid gamer.



Spice (synthetic marijuana)

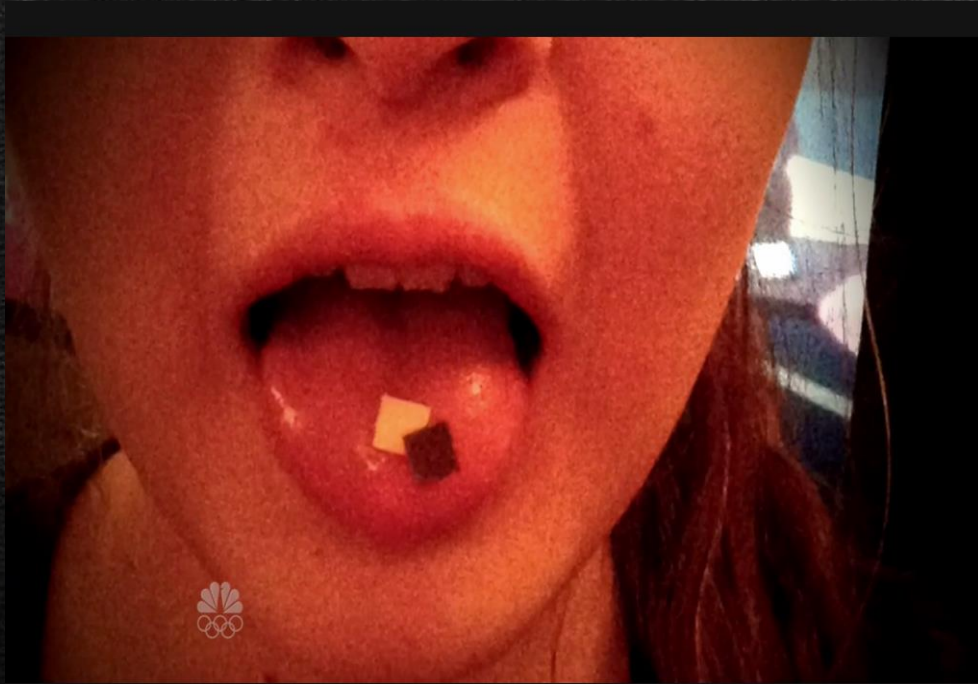
Effects on Mind & Body

- Agitation
- Anxiety including extreme panic attacks
- Depression
- Paranoia
- Psychosis
- Hallucinations
 - Visual
 - Auditory
- Increased blood pressure
- Increased heart rate
- Cardiac arrest
- Blood shot eyes
- Insomnia
- Tingling, numbness
- Vomiting
- Seizures
- Tremors
- Suicidal Thoughts?

Synthetic Marijuana (Spice/K2) Dangers

- Unregulated, Untested, No Medicinal Use
- No long-term studies, the true effects are not yet known
- Never Tested on Humans
- Spice/K2 is **physically addicting**
- Dangerous! One-time use has resulted in death!
- Flavors - Cotton Candy, Bubble Gum, Juicy Fruit, Strawberry, Fruit Punch

"One Small Dose" – Dateline NBC



17-year-old Tara Fitzgerald decides to experiment with drugs

Prescription Drug Misuse

- USA <5% of world population
- consumes 99% global hydrocodone
- consumes >80% global opioid



Commonly Abused Prescription Drugs



vicodin®
(hydrocodone bitartrate and acetaminophen tablets, USP)

III

5 mg/500 mg

Rx only



Every 19 minutes an American Dies of
a Prescription Drug Overdose



— DRUG OVERDOSES —

KILL MORE

THAN CARS, GUNS, AND FALLING.



Falling **26,852 deaths**



Guns **31,672 deaths**



Traffic accidents **33,687 deaths**

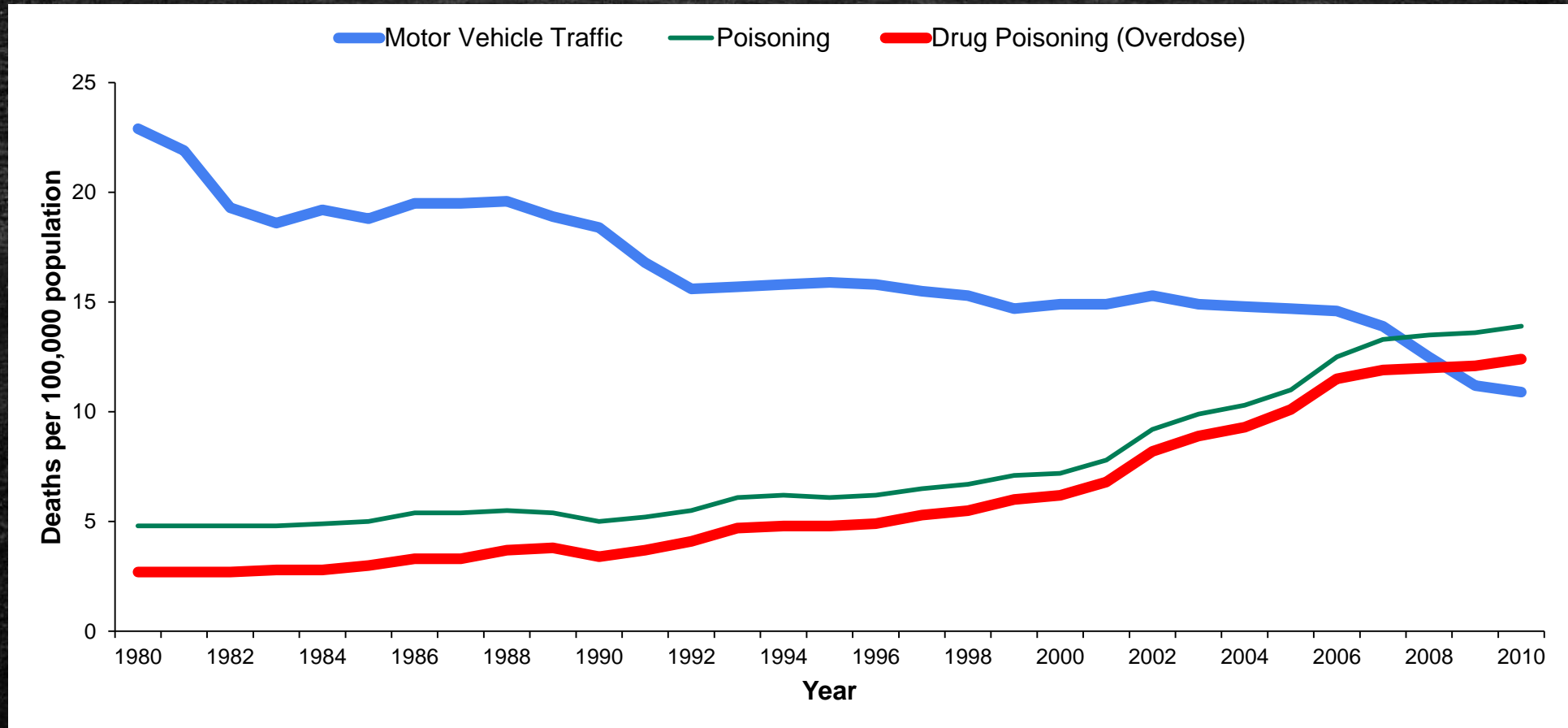


Drug overdoses **38,329 deaths***

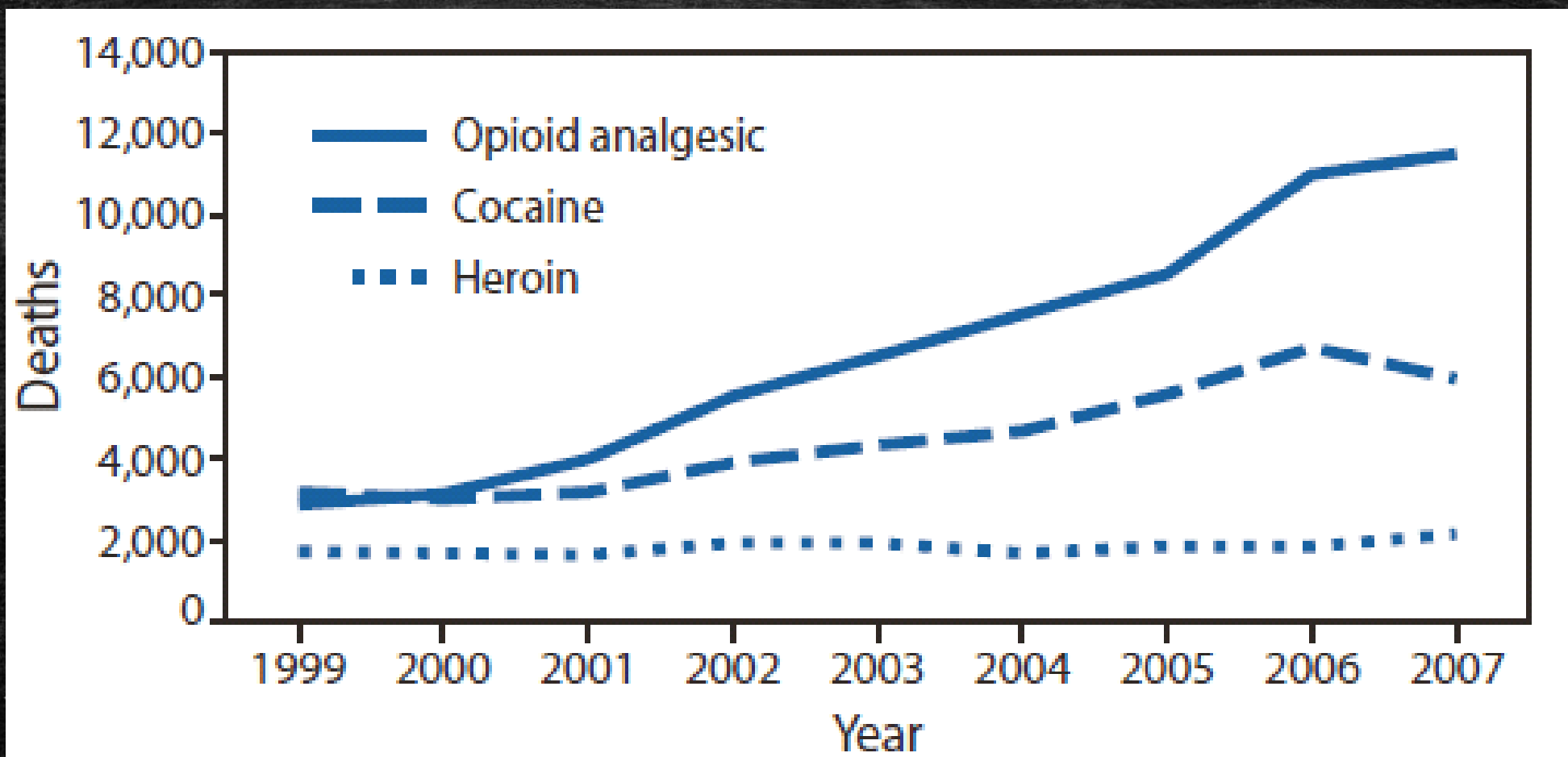
*30,006 of which were unintentional.

Source: CDC Wide-ranging OnLine Data for Epidemiologic Research (WONDER) on Mortality: <http://wonder.cdc.gov/mortsql.html> (2010)

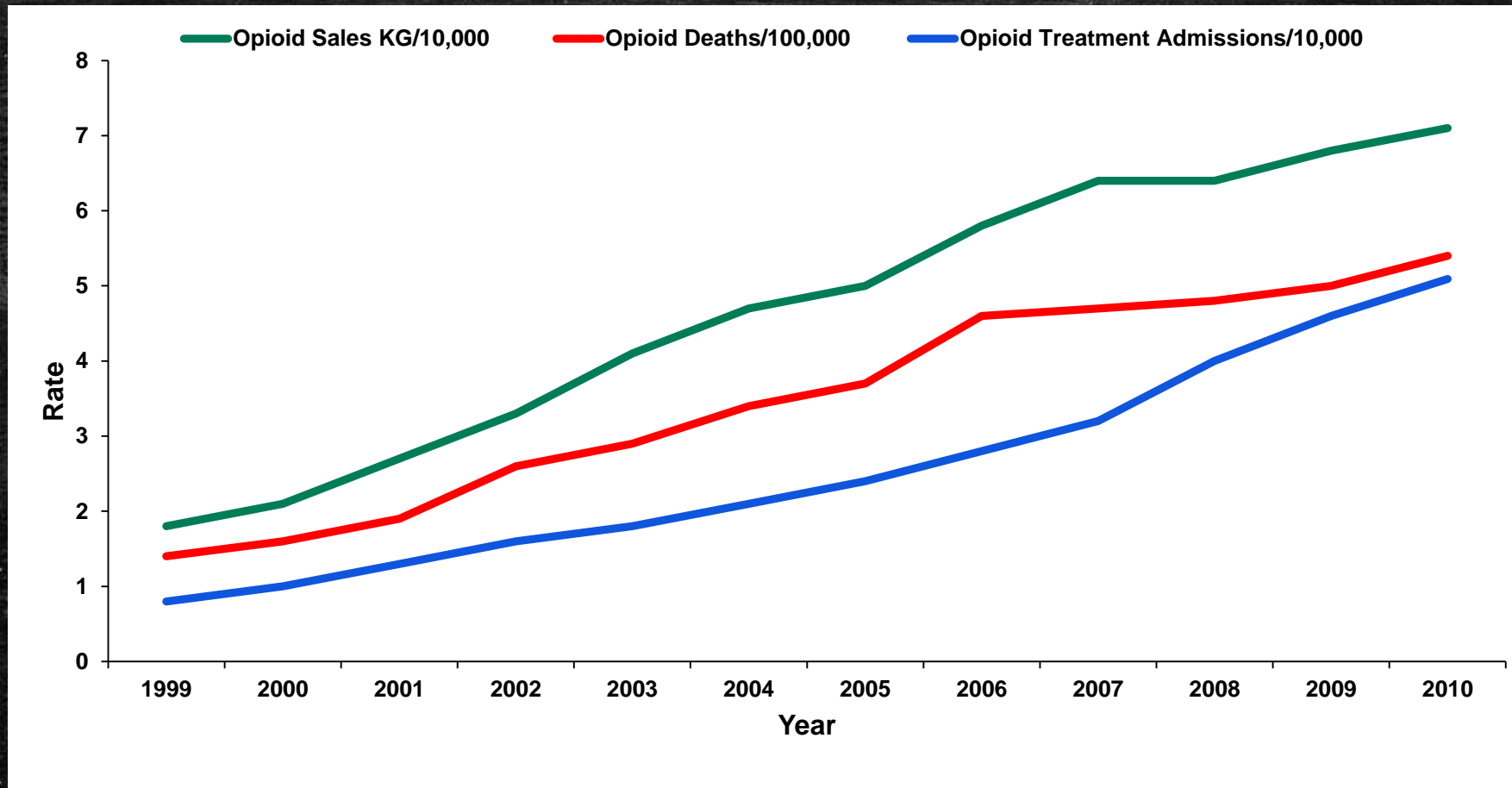
US Death Rate Car Accident vs Overdose



Overdose death rates by drugs



Rates of Opioid Overdose Deaths, Sales, and Treatment Admissions, United States, 1999–2010



2011 INDIANA

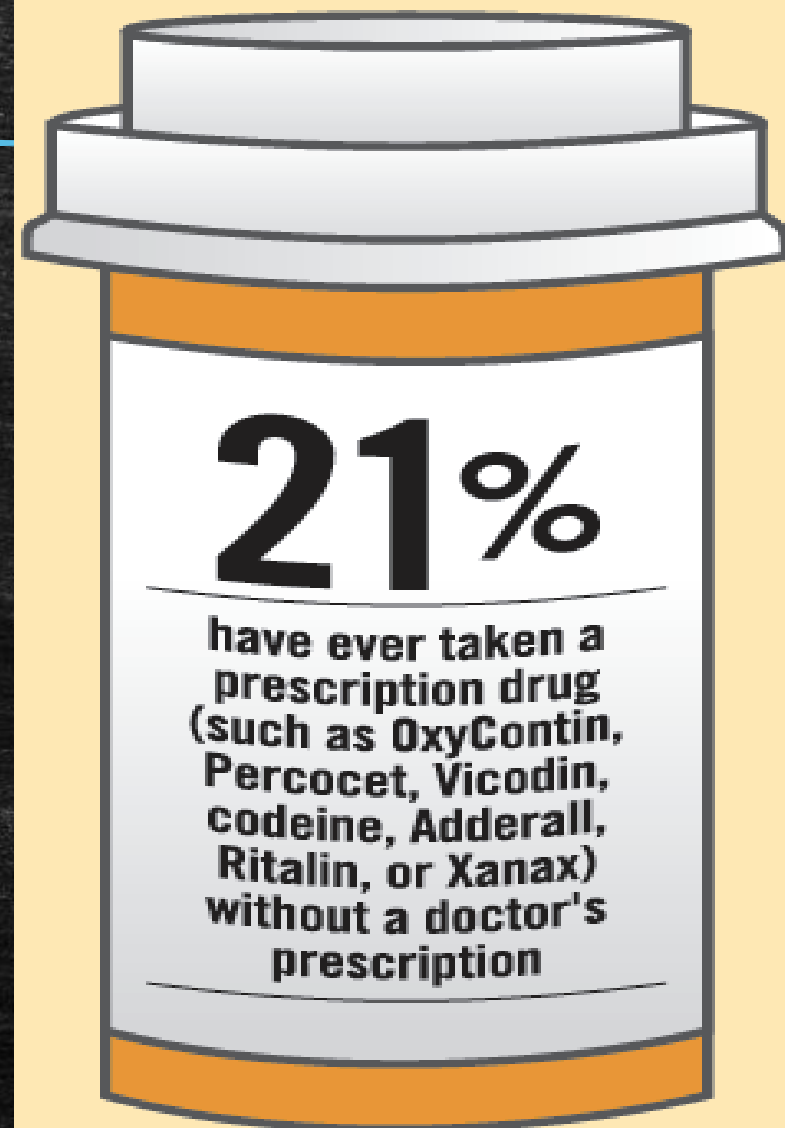


• ALCOHOL AND
OTHER DRUG USE •

FACTS

about

HIGH SCHOOL STUDENTS



2015 Nonmedical Use of Vicodin and OxyContin during past year

Vicodin

- .9% of 8th graders
- 2.5% of 10th graders
- 4.4% of 12th graders

OxyContin

- .8% of 8th graders
- 2.6% of 10th graders
- 3.7% of 12th graders

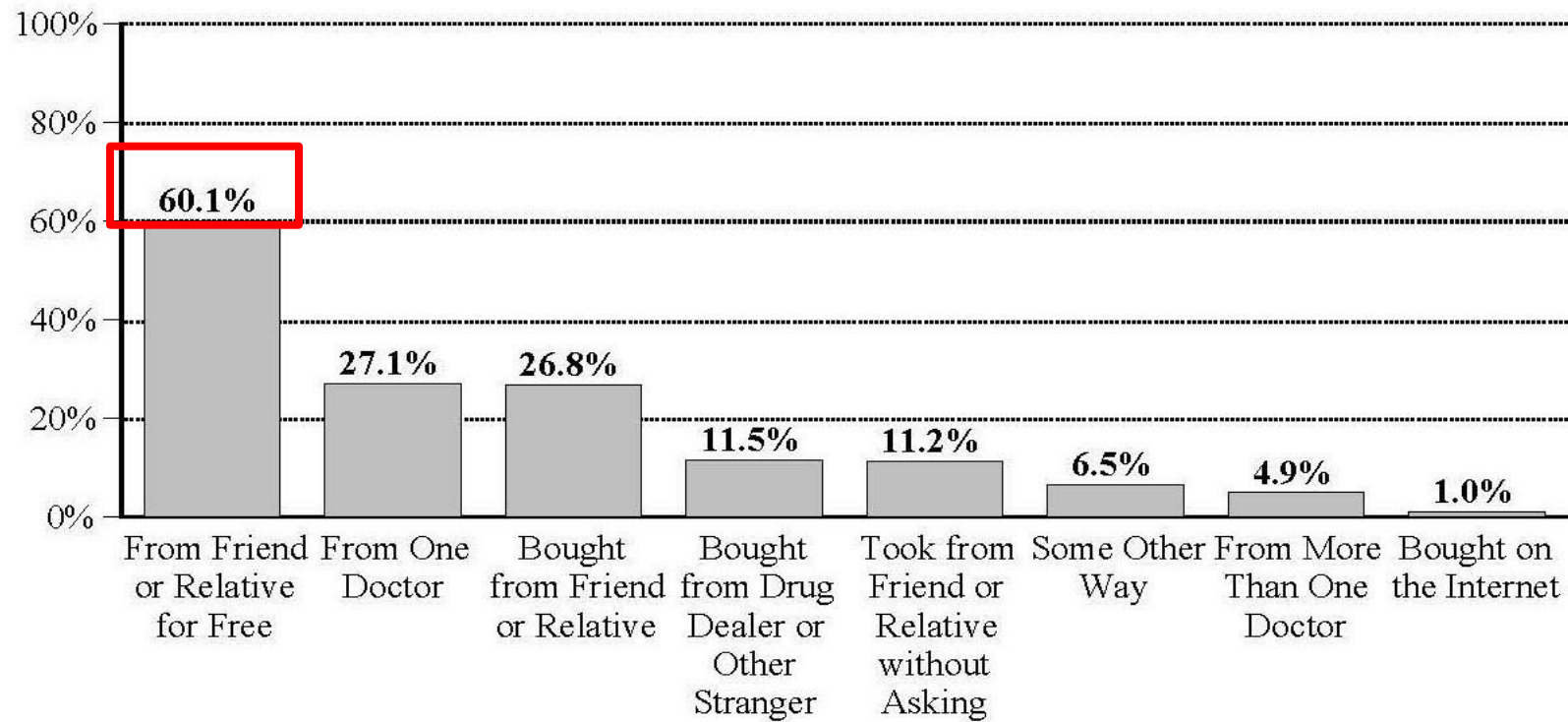


Source:

[Source: Monitoring the Future \(University of Michigan Web Site\).](#)

Source of Pills

**Method of Obtaining Prescription Pain Relievers
Reported by Past Month Nonmedical Users Ages 12 or Older
(2009 & 2010 Combined Annual Averages)**



National Survey on Drug Use and Health 2010.

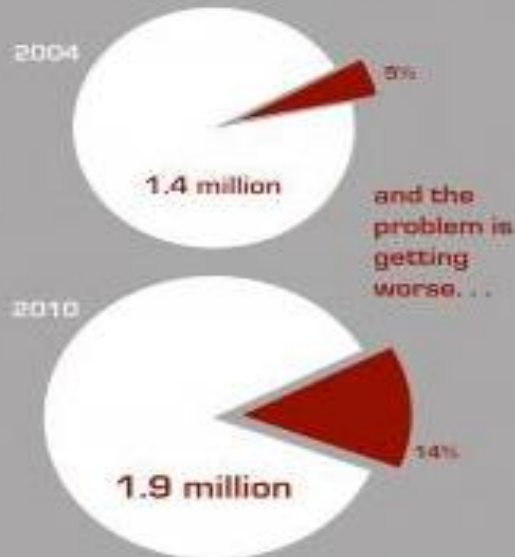
ABUSE OF PRESCRIPTION PAIN MEDICATIONS RISKS HEROIN USE

In 2010 almost 1 in 20 adolescents and adults – 12 million people – used prescription pain medication when it was not prescribed for them or only for the feeling it caused¹. While many believe these drugs are not dangerous because they can be prescribed by a doctor, abuse often leads to dependence. And eventually, for some, pain medication abuse leads to heroin.



PEOPLE WHO TAKE NON MEDICAL
PRESCRIPTION PAIN RELIEVERS WILL TRY
HEROIN WITHIN 10 YEARS²

Number of People Who Abused or were
Dependent on Pain Medications and
Percentage of Them that Use Heroin³



Heroin users are **3X** as likely
to be dependent

14% of non medical prescription
pain reliever users are dependent

54% of heroin users are dependent.⁴

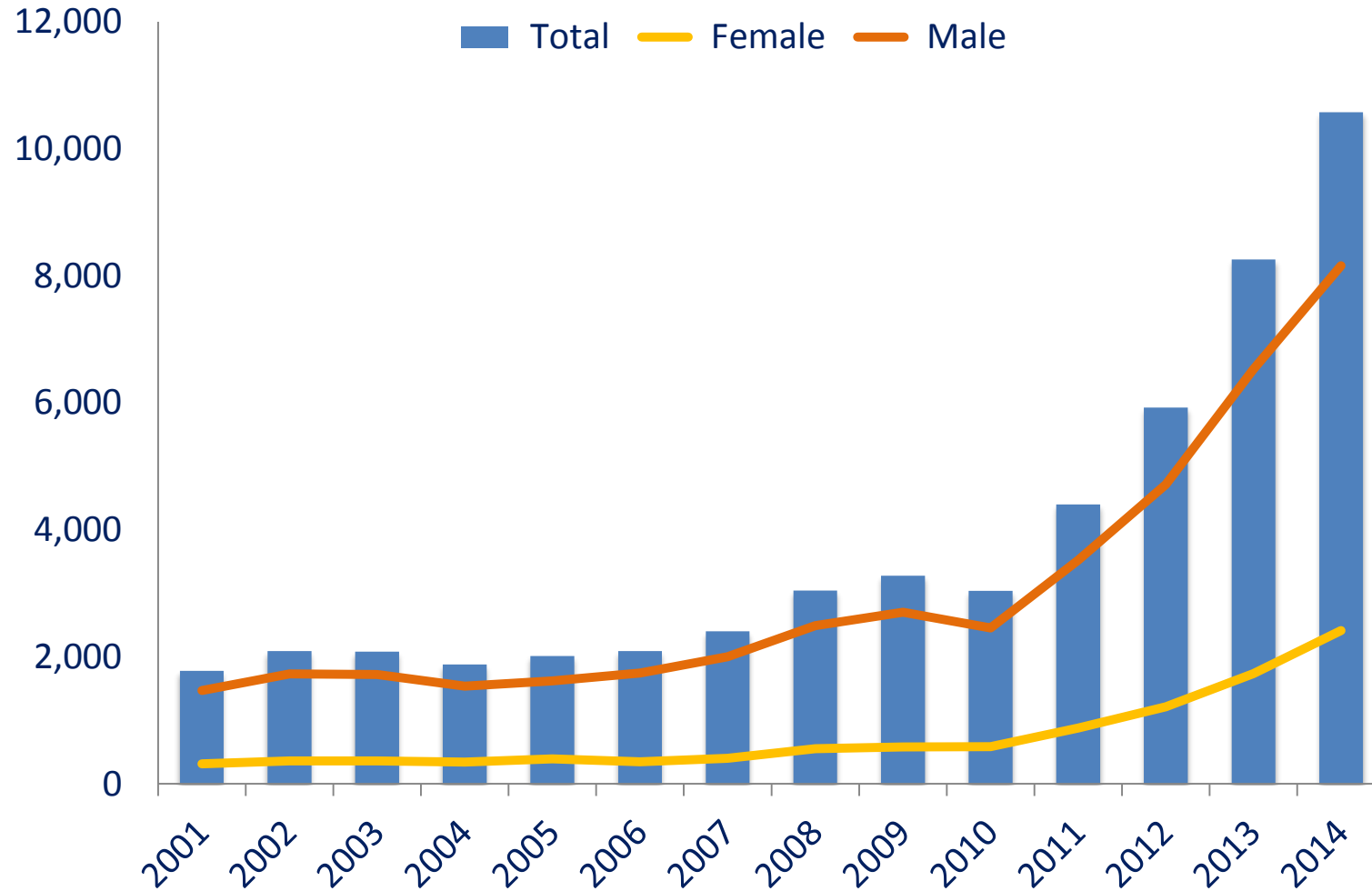
Heroin Emergency Room Admissions Are Increasing⁵





National Overdose Deaths

Number of Deaths from Heroin



Source: National Center for Health Statistics, CDC Wonder



A Heroin High

What does Heroin feel like?

- “falling into the softest bed of silk in the world”
- “floating on a cloud into the sky with complete control over the world”
- “warm feeling after a good rush, feel like I’m on top of the world”
- “warm golden sunshine flowing through your veins. It makes everything ok”
- “dreamlike detachment from any pain or discomfort. Only pleasure exists”
- “your life is perfect”

What does Heroin look like?





Intoxicating euphoria

Context becomes etched in memory

Use to get High

Ordinary rewards lose power

Use to Feel Good

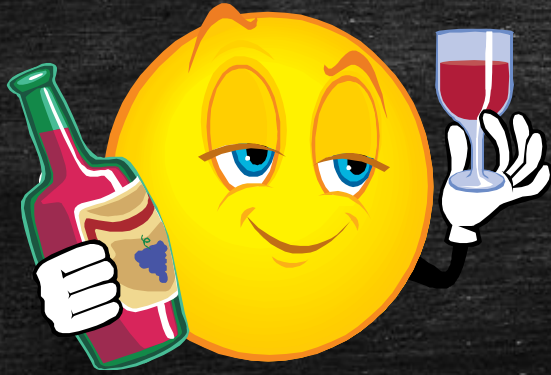
Increased sensitivity to stress
→ Negative emotions

Addiction

Who are these people?



Mia Culpa- We Send Mixed Message



Mixed Messages



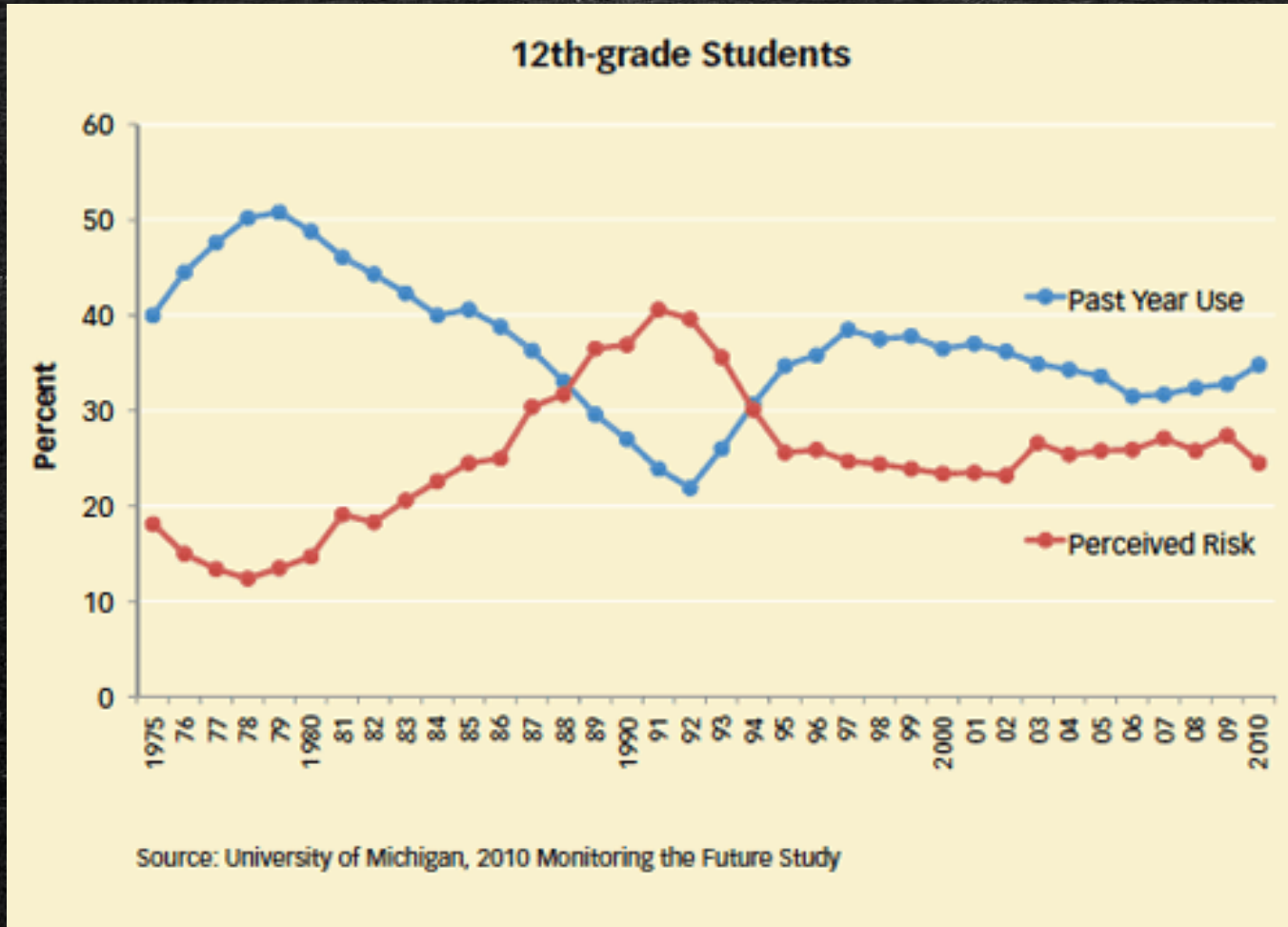
- Marijuana is marketed as medicine
- Barack Obama thinks Marijuana is OK, he used it in childhood
- Entertainment industry largely portrays teen substance use as “cool” & “fun”
- Some parents believe that children OK to use substances under their guidance
- Parents consider substance use normal or “Rite of Passage”




12th Graders- How much do you think people risk harming themselves (physically or in other ways), if they....

- Use marijuana regularly - 31% great risk
- Try heroin once or twice - 64% great risk
- Use heroin regularly – 84% great risk
- Try Narcotic Pill once or twice – 44% great risk
- Try Adderall occasionally – 41% great risk
- Use electronic cigarettes regularly - 16% great risk

Perception of Harm Matters



MEDICINE ABUSE REPORT CARD

Subject	Grade
 <p>During the last conversation they had with their parents regarding substance abuse, only 14 percent of teens indicated they had discussed the misuse or abuse of any type of prescription drug.</p>	F-
In comparison, a majority of teens (81 percent) say they have discussed the risks of marijuana use with their parents.	B
80 percent have discussed alcohol.	B
Nearly one-third of teens have discussed crack/cocaine.	D-

Comments

Unsatisfactory: *Stimulants contributing to Rx epidemic*

One in four teens believes that prescription drugs can be used as a study aid.

Nearly one-third of parents say they believe ADHD medication can improve a child's academic or testing performance, even if the teen does not have ADHD.

Russian Roulette or Right of Passage?

If you could substantially improve the chances that children would avoid accidents, Injuries (including car accidents, rape and STI's), a range of medical and mental health problems, unintended pregnancies, criminal involvement and even death, AND that they would do better academically and professionally, would you do it?

What Can We do?

DELAY ONSET OF SUBSTANCE USE

be it tobacco, alcohol, controlled
prescription or other drugs--as long as possible

Russian Roulette

**Even Once - Doing Meth,
Bath Salts, Synthetic
Marijuana, Prescription
Narcotics, Heroin or Cocaine
Will harm a child &
could kill a child**



How can communities delay substance use?

- Make expectations consistent & very clear
- Model healthy behavior
- Model (real time) coping/problem solving skills
- Nurturing family environment – parental connection
- Discuss & Foster goals for the future
- Communicate openly & honestly about substance use
- Encourage involvement in Spiritual Practice/ Schools/Communities
- Foster SLEEP- Teens need 8.5-10h every night
- Eat family meals- provide NUTRITION
- Address stress, anxiety, depression or any mood issues
- **Restrict Access to all addictive substances (including prescription drugs)**



How to Talk to Adolescents: A New Approach

In the past, programs highlighting scare tactics against drugs have been heavily used. These programs have proven to be less helpful than one would hope. Other suggested methods of talking to adolescents

- Beginning a conversation with the teen's views
- Discuss results of drug use highlighting science rather than scare tactics
- Consider media messages and brainstorm together
- Discuss peer pressure before it becomes an issue
- Discuss own drug use if applicable

RECURSOS EN ESPAÑOL

HELPLINE: 1-855-DRUGFREE

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struggling with their son or daughter's substance use.*

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MAKE THE CALL
SAVE A LIFE



Thank you